

3. AIR QUALITY SIGNIFICANCE THRESHOLDS

3.1 INTRODUCTION

The Ventura County Air Pollution Control District (APCD or District) reviews and comments on the adequacy and accuracy of environmental documents for projects that may affect air quality in Ventura County. Such documents include Notices of Preparation, Initial Studies, Negative Declarations, Mitigated Negative Declarations (MND), and Environmental Impact Reports (EIR). The APCD recommends that an MND or an EIR be prepared for projects that meet one or more of the significance criteria listed below.

As stated in Chapter 1, these criteria are guidelines only. The final decision on the significance of air quality impacts, the appropriate environmental document, and mitigation measures, lies with the lead agency for the project. These Guidelines are not applicable to equipment, operations, or processes required to have an APCD Permit to Operate.

3.2 DEFINITION OF SIGNIFICANCE

Section 15002(g) of the California Environmental Quality Act (CEQA) Guidelines defines “significant effect on the environment” as “a substantial adverse change in the physical conditions that exist in the area affected by the proposed project.” When an environmental document identifies a significant environmental effect, the government agency approving the project must make findings as to whether the adverse environmental effects have been substantially reduced or if not, why they were not substantially reduced. Appendix G, Environmental Checklist Form, of the state CEQA Guidelines presents a model initial study checklist. This checklist includes suggested criteria, in question format, for determining whether a project will have a “potentially significant impact” on air quality. According to the criteria, a project will have a “potentially significant impact” on air quality if it will:

- Conflict with or obstruct implementation of the applicable air quality plan.
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors).
- Expose the public (especially schools, day care centers, hospitals, retirement homes, convalescence facilities, and residences) to substantial pollutant concentrations.
- Create objectionable odors affecting a substantial number of people.

According to Appendix G, a “potentially significant impact” finding is appropriate if there is substantial evidence that an effect may be significant.

In addition, the Ventura County Air Pollution Control Board has adopted a policy stating that general development projects whose emissions are expected to meet or exceed the criteria in Section 3.3, “Recommended Significance Criteria,” will have a potentially significant adverse impact on air quality.

3.3 RECOMMENDED SIGNIFICANCE CRITERIA

The following are suggested threshold criteria for determining whether an EIR or an MND should be prepared for a development project to address potential adverse air quality impacts. Tests of significance are not limited to the criteria listed below. Other factors, especially those related to the location of the project and potential impacts on nearby populations (e.g., schools, day care centers, residences, and hospitals) also should be examined. These include: proximity of the project to populated areas, proximity of the proposed project to other pollutant sources (e.g., industrial facilities emitting odorous or hazardous substances), and projects with potential land use conflicts.

3.3.1 Criteria Pollutants

1. Ozone (based on emission levels of reactive organic compounds and oxides of nitrogen)

The following are the reactive organic compounds (ROC) and nitrogen oxides (NOx) thresholds that the Ventura County Air Pollution Control Board has determined will individually and cumulatively jeopardize attainment of the federal one-hour ozone standard, and thus have a significant adverse impact on air quality in Ventura County. Chapter 5, Estimating Ozone Precursor Emissions, presents procedures for estimating project emissions.

(a) Ojai Planning Area*

Reactive Organic Compounds: 5 pounds per day

Nitrogen Oxides: 5 pounds per day

(b) Remainder of Ventura County**

Reactive Organic Compounds: 25 pounds per day

Nitrogen Oxides: 25 pounds per day

* The Ojai Planning Area is the area defined as the “Ojai Valley” in Ventura County Non-Coastal Zoning Ordinance, Article 12, Section 8112-2, plus the Ventura (Ojai) Non-growth Area (NGA) (as depicted in the 1987 *Ventura County Air Quality Management Plan* (AQMP), Appendix E-87, Figure E-1,

“Map of Ventura County with Growth/Nongrowth Areas,” page E-11). In these Guidelines, see Figure 3-1, “Ojai Planning Area.”

- ** The City of Simi Valley uses a significance threshold of 13.7 tons per year of reactive organic compounds or nitrogen oxides, as directed by the City of Simi Valley City Council.

2. Criteria Pollutants – General

A project that may cause an exceedance of any ambient air quality standard (state or federal), or may make a substantial contribution to an existing exceedance of an air quality standard will have a significant adverse air quality impact. “Substantial” is defined as making measurably worse an existing exceedance of a state or federal ambient air quality standard. For example, a project that directly or indirectly produces large quantities of carbon monoxide (CO) could cause an exceedance of the state or federal CO standards. Such a determination may require the use of an appropriate air quality model.

3. Ozone – Cumulative Impacts Based on Project-Specific AQMP Consistency

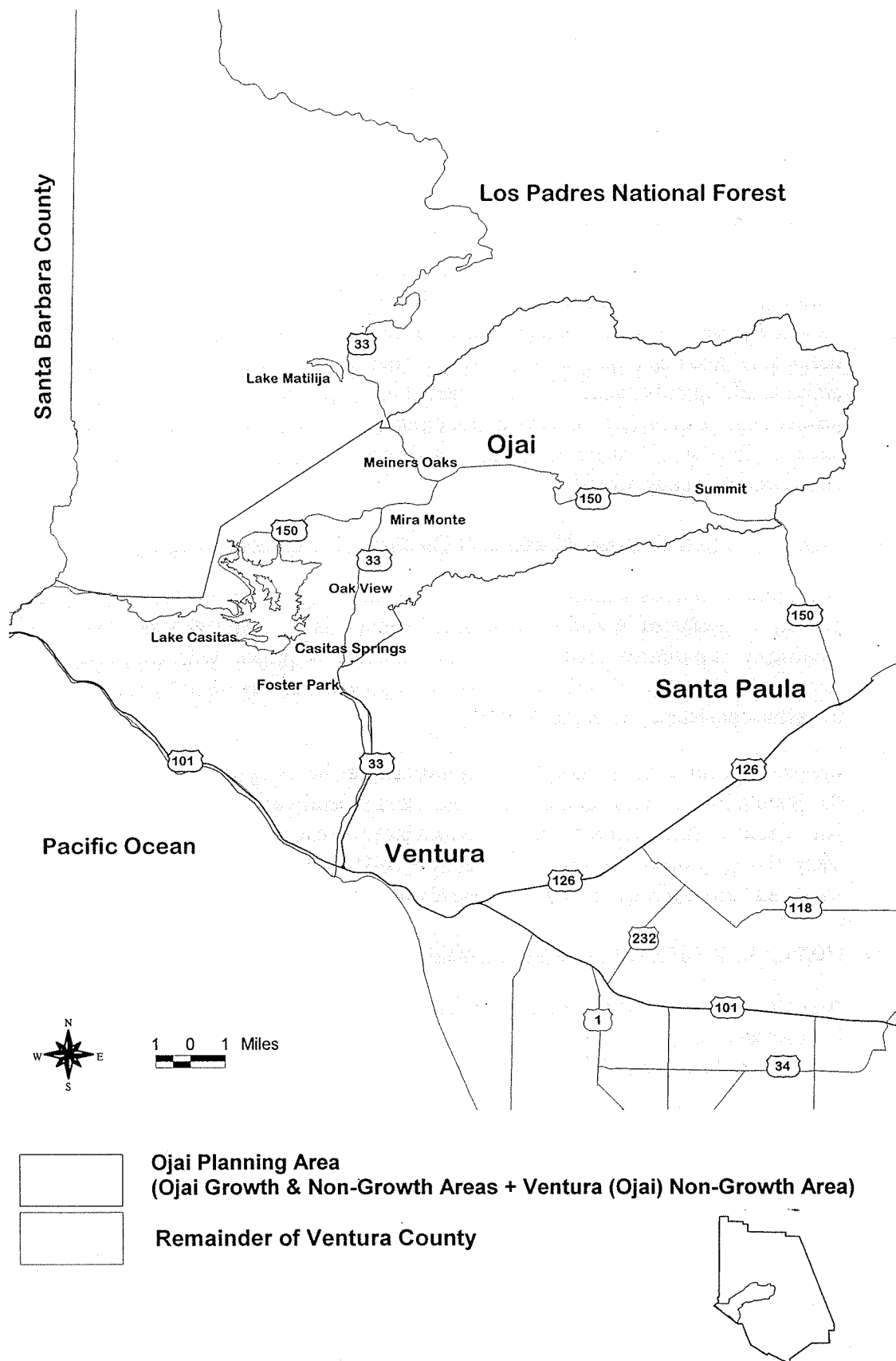
A project with emissions of two pounds per day or greater of ROC, or two pounds per day or greater of NO_x that is found to be inconsistent with the AQMP will have a significant cumulative adverse air quality impact. A project with emissions below two pounds per day of ROC, and below two pounds per day of NO_x, is not required to assess consistency with the AQMP.

Inconsistent projects are usually those that cause the existing population to exceed the population forecasts contained in the most recently adopted AQMP. Chapter 4, Air Quality Management Plan Consistency, presents specific procedures for determining project consistency with the AQMP. Those procedures should be followed before making a final consistency determination for a project.

4. Ozone – Cumulative Impacts Based on General Plan AQMP Consistency

Any General Plan Amendment or revision that would provide directly or indirectly for increased population growth above that forecasted in the most recently adopted AQMP will have a significant cumulative adverse air quality impact.

**FIGURE 3-1
OJAI PLANNING AREA**



3.3.2 Other Pollutants of Concern

1. Fugitive Dust

- (a) A project that may be reasonably expected to generate fugitive dust emissions in such quantities as to cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which may endanger the comfort, repose, health, or safety of any such person or the public, or which may cause, or have a natural tendency to cause, injury or damage to business or property (see California Health and Safety Code, Division 26, §41700) will have a significant adverse air quality impact.
- (b) A project for which an appropriate air dispersion modeling analysis shows a possible violation of an ambient particulate standard will have a significant adverse air quality impact.

Chapter 6, Assessing Project-Specific, Localized, Non-Ozone Impacts, includes a discussion of fugitive dust emissions.

2. Toxic Air Contaminants

Impacts from toxic air contaminants (TACs) may be estimated by conducting a health risk assessment (HRA). The HRA procedure involves the use of an air quality model and a protocol approved by the APCD. Following are the recommended significance thresholds:

- (a) Lifetime probability of contracting cancer is greater than 10 in one million (as identified in an HRA).
- (b) Ground-level concentrations of non-carcinogenic toxic air pollutants would result in a Hazard Index of greater than 1 (as identified in an HRA).

The Hazard Index is determined by dividing the “annual exposure level” by the “reference exposure level.” The “annual exposure level” (AEL) is the estimated annual average concentration level of a TAC that is estimated to occur as a result of the proposed project. The “reference exposure level” (REL) is a concentration level or dose, at or below which no adverse health effects are anticipated. RELs generally are based on the most sensitive adverse health effect reported in the medical and toxicological literature.

Chapter 6, Assessing Project-Specific, Localized, Non-Ozone Impacts, includes a discussion of toxic air pollutants.

3. Odors

A qualitative assessment indicating that a project may reasonably be expected to generate odorous emissions in such quantities as to cause detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which may endanger the comfort, repose, health, or safety of any such person or the public, or which may cause, or have a natural tendency to cause, injury or damage to business or property (see California Health and Safety Code, Division 26, §41700) will have a significant adverse air quality impact.

Chapter 6, Assessing Project-Specific, Localized, Non-Ozone Impacts, provides a discussion of odors.

3.4 CHOOSING THE APPROPRIATE ENVIRONMENTAL DOCUMENT FOR AIR QUALITY IMPACT ANALYSES

1. Negative Declaration

A negative declaration is appropriate if all of the following apply:

- The project will emit less than 5 pounds per day of ROC and less than 5 pounds per day of NO_x in the Ojai Planning Area, or less than 25 pounds per day of ROC and less than 25 pounds per day of NO_x in the remainder of the county.
- The project will be consistent with the most recently adopted AQMP.
- The project does not require a General Plan Amendment that will directly or indirectly increase population growth above that forecasted in the most recently adopted AQMP.
- The project will not have any other significant adverse air quality impacts.

2. Mitigated Negative Declaration

A mitigated negative declaration is appropriate if all of the following apply:

- Mitigation measures have been agreed to by the project applicant that reduce project emissions to less than 5 pounds per day of ROC and less than 5 pounds per day of NO_x in the Ojai Planning Area, or less than 25 pounds per day of ROC and less than 25 pounds per day of NO_x in the remainder of the county.
- The project will be consistent, or made to be consistent, with the most recently adopted AQMP.
- The project does not require a General Plan Amendment that will directly or indirectly increase population growth above that forecasted in the most recently adopted AQMP.

- There are no other significant air quality impacts, or the applicant has agreed to mitigate all other air quality impacts.
- The project applicant has agreed to mitigate project-related significant air quality impacts through a revision to the project description.

3. Environmental Impact Report

An EIR should be prepared for any project that meets or exceeds one or more of the significance criteria listed in Section 3.3, "Significance Criteria," and the project cannot qualify for an MND.

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4. AIR QUALITY MANAGEMENT PLAN CONSISTENCY

4.1 INTRODUCTION

The primary objective of the *Ventura County Air Quality Management Plan* (AQMP) is to provide continuous air pollutant emission reductions over time, with the goal of attaining the federal and state standards for ozone. City and county growth consistent with the AQMP is a vital component of the overall AQMP ozone control strategy to ensure continued progress towards attaining the federal and state ozone standards.

Section 15125(d) of the California Environmental Quality Act (CEQA) Guidelines stipulates that Environmental Impact Reports (EIR) shall discuss “any inconsistencies between a proposed project and applicable general plans and regional plans. Such regional plans include, but are not limited to, the applicable air quality attainment or maintenance plan (or State Implementation Plan)...” Moreover, pursuant to Appendix G, “Environmental Checklist Form,” of the state CEQA Guidelines, a project that would “conflict with or obstruct implementation of the applicable air quality plan” may have a significant adverse air quality impact. The lead agency proposing to approve or implement the project is responsible for making the AQMP consistency determination.

An environmental document for a proposed project must address project consistency with the AQMP. Project consistency with the AQMP can be determined by comparing the actual population growth in the county with the projected growth rates used in the AQMP. The projected growth rate in population is used as an indicator of future emissions from population-related emission categories in the AQMP. These emission estimates are used, in part, to project the date by which Ventura County will attain the federal ozone standard. The County of Ventura Planning Division maintains an ongoing population tracking system. Therefore, a demonstration of consistency with the population forecasts used in the most recently adopted AQMP should be used for assessing project consistency with the AQMP.

However, if there are more recent population forecasts that have been adopted by the Ventura Council of Governments (VCOG) where the total county population is lower than that included in the most recently adopted AQMP population forecasts, lead agencies may use the more recent VCOG forecasts for determining AQMP consistency.

The geographic subareas used in the forecasts are known as growth and non-growth areas. These areas are based on a network of analysis zones created by the State Department of Transportation and the Ventura County Public Works Agency. The growth and non-growth areas are comprised of aggregated analysis zones.

Figure 4-1, “Ventura County Growth and Non-growth Areas,” is a map that shows the growth and non-growth areas of the county. This map is based on the February 1998 version of the 1990 Analysis Zones map prepared by the Graphics Division of the

Resource Management Agency. The entire present and projected boundary area of each of the ten cities in the county is within a respective growth area. In addition to the ten growth areas, there are three unincorporated growth areas. The unincorporated growth areas include urbanized development that has already occurred, or is expected to occur under the Ventura County General Plan. An example is the Piru Growth Area. The remainder of the AQMP population forecast covers the unincorporated non-growth areas. These areas are not expected to receive significant urban development. All of the non-growth areas, except for the Ojai Non-growth Area, are aggregated together for AQMP consistency assessment purposes. The excepted area comprises part of the Ojai Valley.

4.2 PROCEDURES FOR DETERMINING CONSISTENCY WITH THE AQMP

The following sections describe the procedures for determining project consistency with the AQMP. Consistency with the AQMP does not mean that a project will not have a significant project-specific adverse air quality impact. However, inconsistency with the AQMP is considered a significant cumulative adverse air quality impact.

A project with estimated emissions two pounds per day or greater of reactive organic compounds (ROC), or two pounds per day or greater of nitrogen oxides (NO_x) that is inconsistent with the AQMP will have a significant cumulative adverse air quality impact. Inconsistent projects are usually those that cause the existing population to exceed the population forecasts contained in the most recently adopted AQMP (see Table 4-1, "1995 AQMP Population Forecasts").

In addition to addressing consistency with the population forecasts, the air quality impact assessment should also address project consistency with emission reduction strategies included in the AQMP. The AQMP contains a number of transportation and energy control measures that help to reduce project emissions. These often can be used to help reduce a project's indirect emissions. Transportation and energy conservation control measures should be incorporated into the project design early in the planning process.

4.2.1 Projects Exempt from Consistency Assessments

A project that conforms to the applicable General Plan designation and has emissions below two pounds per day of ROC, and below two pounds per day of NO_x, is not required to assess consistency with the AQMP. Consequently, a project with emissions below these levels is also considered to have a less than significant cumulative adverse air quality impact.

4.2.2 General Plan Amendments

Any General Plan Amendment that will result in population growth above that forecasted in the most recently adopted AQMP is inconsistent with the AQMP. It will therefore have a significant cumulative adverse air quality impact.

TABLE 4-1
1995 AQMP POPULATION FORECASTS*

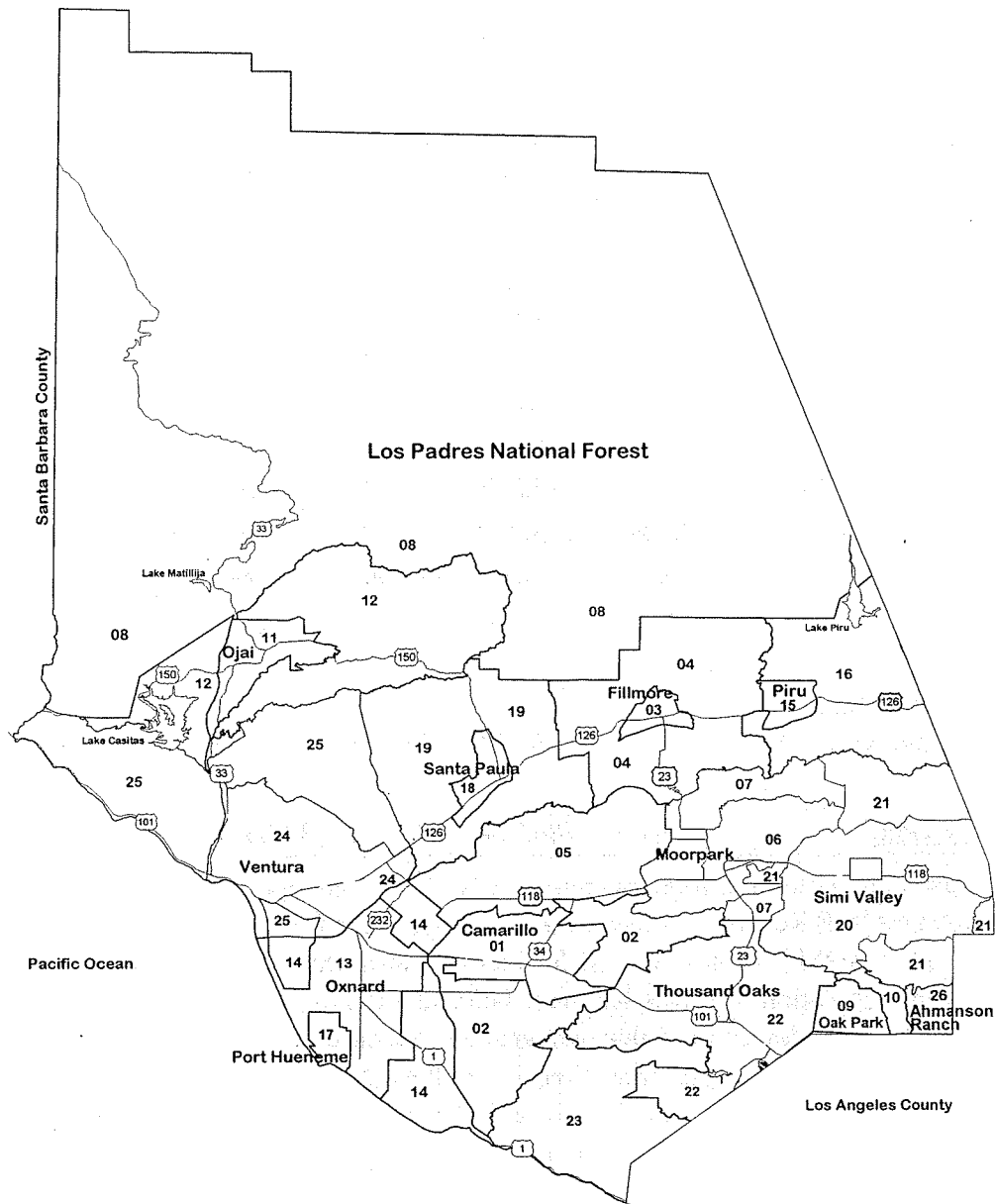
	2000	2001	2002	2003	2004	2005
<u>Growth Areas</u>						
Ahmanson Ranch	5,203	5,500	5,793	6,087	6,379	6,669
Camarillo	67,916	68,761	69,599	70,428	71,253	72,072
Fillmore	17,833	17,991	18,149	18,305	18,460	18,614
Moorpark	39,591	40,975	42,389	43,791	45,185	46,570
Oak Park	17,098	17,098	17,100	17,100	17,101	17,101
Oxnard	161,000	162,408	163,800	165,184	166,557	167,918
Piru	1,604	1,634	1,667	1,697	1,727	1,759
Port Hueneme	25,875	26,236	26,595	26,950	27,304	27,654
Santa Paula	30,070	30,548	31,021	31,493	31,963	32,429
Simi Valley	121,170	123,212	125,235	127,243	129,232	131,207
Thousand Oaks	122,816	124,010	125,192	126,369	127,533	128,691
Ventura	110,000	111,001	112,001	112,999	114,000	115,000
Ojai G/NGAs**	30,060	30,258	30,456	30,648	30,837	31,032
<u>Non-growth Areas</u>						
Aggregated NGAs***	26,182	26,592	26,978	27,379	27,758	28,158
<u>County Total</u>	776,418	786,224	795,975	805,673	815,289	824,874

* Based on population forecasts adopted by VCOG on June 24, 1993, and used in the 1995 AQMP Revision, Appendix E-95. Population forecasts from the most recently adopted AQMP should be used for AQMP consistency analyses. If there are more recent population forecasts that have been adopted by VCOG where the total county population is lower than that included in the most recently adopted AQMP, lead agencies may use the more recent VCOG forecasts for determining AQMP consistency. Contact APCD staff at 805/645-1427 or 805/645-1439 for questions about the most current population forecasts.

** G/NGAs = Growth and Non-growth areas.

*** Excludes the Ojai Non-growth Area.

FIGURE 4-1
VENTURA COUNTY GROWTH AND NON-GROWTH AREAS



GROWTH AREAS

01 Camarillo GA
03 Fillmore GA
06 Moorpark GA
09 Oak Park GA
11 Ojai GA
13 Oxnard GA
15 Piru GA
17 Port Hueneme GA
18 Santa Paula GA
20 Simi Valley GA
22 Thousand Oaks GA
24 Ventura GA
26 Ahmanson Ranch GA

NON-GROWTH AREAS

02 Camarillo NGA
04 Fillmore NGA
05 Las Posas NGA
07 Moorpark NGA
08 North Half NGA
10 Oak Park NGA
12 Ojai NGA
14 Oxnard NGA
16 Piru NGA
19 Santa Paula NGA
21 Simi Valley NGA
23 Thousand Oaks NGA
25 Ventura NGA

3 0 3 Miles



4.2.3 General Land Use Development Projects

The following procedures should be used to determine project consistency with the AQMP for projects conforming to applicable general plans and having emissions of two pounds or greater per day of ROC or two pounds or greater per day of NOx.

Using Figure 4-1, "Ventura County Growth and Non-growth Areas," determine the growth or non-growth area in which the project is located. If the appropriate growth or non-growth area cannot be determined, contact the APCD Planning Division at 805/645-1427 or 805/645-1439.

If the project is in a growth area, refer to Section 4.2.3.1, "Projects Located in Growth Areas (Except Ojai Growth Area)." If the project is in a non-growth area, refer to Section 4.2.3.2, "Projects Located in Non-growth Areas (Except Ojai Non-growth Area)." If the project is located in the Ojai Growth or Non-growth area, refer to Section 4.2.3.3, "Projects Located in the Ojai Growth and Non-growth Areas."

4.2.3.1 Projects Located in Growth Areas (Except Ojai Growth Area)

1. Determine if the project conforms to the applicable General Plan.
2. Determine the current estimated population of the growth area. This information can be provided by APCD Planning Division staff.
3. Compare the current estimated population of the growth area (obtained in step 2 above) with the growth area population target for the next year. For example, if the current year is 2000, compare the estimated existing population of the growth area with the population target for 2001. Refer to Table 4-1, "1995 AQMP Population Forecasts."

If the current estimated population of the growth area is below its next year's population target, and the project conforms to the applicable General Plan designation, the project is determined to be consistent with the AQMP.

4. If the current estimated population of the growth area exceeds its next year's population target, the project should be found to be inconsistent with the AQMP. Inconsistency with the AQMP is considered a significant cumulative adverse air quality impact.

4.2.3.2 Projects Located in Non-growth Areas (Except Ojai Non-growth Area)

1. Determine if the project conforms to the applicable General Plan.
2. Determine the current estimated population of the aggregated non-growth areas.

This information can be provided by APCD Planning Division staff.

3. Compare the current estimated population of the aggregated non-growth areas (obtained in step 2 above) with the aggregated non-growth area population target for the next year. For example, if the current year is 2000, compare the estimated existing population of the aggregated non-growth areas with the population target for 2001. Refer to Table 4-1, "1995 AQMP Population Forecasts."

If the current estimated population of the aggregated non-growth areas is below its next year's population target, and the project conforms to the applicable General Plan designation, the project is determined to be consistent with the AQMP.

4. If the current estimated population of the aggregated non-growth areas exceeds its next year's population target, the project should be found to be inconsistent with the AQMP. Inconsistency with the AQMP is considered a significant cumulative adverse air quality impact.

4.2.3.3 Projects Located in the Ojai Growth and Non-growth Areas

Consistency with the population forecasts for the Ojai Growth and Non-growth Areas (also known as the Ojai Valley) is assured due to Article 12 of the Ventura County Non-Coastal Zoning Ordinance. Article 12, which was adopted in July 1982, established a residential building permit allocation program to ensure consistency with the adopted AQMP population projections.

4.3 INCONSISTENCY WITH THE AQMP AND CUMULATIVE ADVERSE AIR QUALITY IMPACTS

A project that is determined to be inconsistent with the AQMP is also determined to have a significant cumulative adverse air quality impact. If a project is inconsistent, there are several options:

1. The project could be revised to eliminate the inconsistency. Project revisions might require that the project be phased, reduced in size, or delayed to ensure consistency with the AQMP population forecasts.
2. Mitigation measures could be applied to reduce or eliminate the inconsistency. This could consist of a jurisdiction adopting a residential building permit allocation program to pace population growth with the AQMP population forecasts in such a way as to ensure that population projections contained in the AQMP are not exceeded.
3. The project could be denied.
4. The project could be approved if the lead agency determines and issues a statement

that there are overriding considerations to approve the project. This does not relieve the decision-making body of the requirement to mitigate the impact to the maximum extent feasible, as required by Section 15126(c) of the CEQA Guidelines.

A finding that a project is consistent with the AQMP does not necessarily ensure that a project will not have a significant project-specific adverse impact on air quality. The recommended criteria for determining whether a project will have an adverse impact on air quality can be found in Section 3.3, "Recommended Significance Criteria."

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5. ESTIMATING OZONE PRECURSOR EMISSIONS

5.1 INTRODUCTION

The primary source of air pollutant emissions associated with residential, commercial, institutional, and some industrial land uses, is motor vehicles. These land uses may not result in significant amounts of direct emissions, but they may generate motor vehicle trips, whose emissions may adversely affect air quality. These land uses are therefore often referred to as “indirect” emission sources.

This chapter describes four methods that are recommended for estimating ozone precursor emissions, all based on the URBEMIS computer program. The California Air Resources Board (ARB) originally developed this program in 1982. As of October 2003, the most current version of the URBEMIS program is URBEMIS2002. This computer program is designed to estimate air emissions from land use development projects. URBEMIS2002 uses ARB’s most recent motor vehicle emission factor model, EMFAC2002 (hence the name URBEMIS2002). As stated in Chapter 1, the Guidelines are not applicable to equipment or operations required to have Ventura County APCD permits (Authority to Construct or Permit to Operate). Moreover, the emissions from equipment or operations requiring APCD permits are not counted towards the air quality significance thresholds.

Previous versions of URBEMIS (URBEMIS versions 1 through 5) were designed to estimate only motor vehicle emissions from trips generated by land use development. URBEMIS has been enhanced so that the user also can estimate construction and area source emissions. Area sources are groups of similar emission sources that do not contribute significant amounts of emissions individually, but do contribute significantly in the aggregate. Examples of area sources include fuel combustion from natural gas appliances, utility engines (including landscape maintenance equipment), and consumer products. URBEMIS also now allows the user to select mitigation measures for construction emissions, area source emissions, and project operational emissions (see Sections 7.4, “Construction Mitigation,” 7.5.1, “Area Source Mitigation Measures,” and 7.5.2, “Operational Mitigation Measures”). URBEMIS2002 contains several additional land uses, major enhancements to the construction emissions and mitigation measures module, and includes a screening analysis option.

Motor vehicle trip rates in URBEMIS are based primarily on the average daily trip data for the various land uses in the Institute of Transportation Engineers’ (ITE) publication *Trip Generation*, Sixth Edition (1997). Motor vehicle trip generation rates different than those listed in ITE’s *Trip Generation* or URBEMIS can be used if the lead agency is provided justification and documentation to its satisfaction that such changes are warranted. Documentation and justification of any changes to the URBEMIS default values should be included in the environmental document.

URBEMIS requires entry of specific information concerning the number and type of units for each land use. It also requires entry of information specific to Ventura County. Ventura County-specific default inputs are contained in copies of the program obtained from the Ventura County Air Pollution Control District (APCD or District), the ARB (<http://www.arb.ca.gov/planning/urbemis/urbemis2002/urbemis2002.htm>), or the South Coast Air Quality Management District (<http://www.aqmd.gov/ceqa/urbemis.html>).

Ventura County-specific default inputs to the URBEMIS computer program are presented in Section 5.3.3.1, "Ventura County-Specific Default Inputs to the URBEMIS Computer Program." Input values other than the Ventura County-specific defaults may be used for calculating emissions. Likewise, modified trip generation rates and percent work trips also may be used. However, as stated earlier, if different values are used, full documentation and justification for the different values should be provided to the satisfaction of the lead agency that such changes are warranted.

Appendix E, Definition of Land Use Categories for Trip Generation and Project Emission Calculation Purposes, contains definitions of all of the land uses contained in ITE's *Trip Generation*. The sixth edition of the ITE manual contains nineteen new land use classifications, revisions to several land use descriptions, and updated trip generation factors for various land uses. Not all of the land uses in ITE's *Trip Generation* are in URBEMIS. However, URBEMIS inputs can be easily modified so that emissions from land uses not in URBEMIS can be calculated using URBEMIS.

Appendix F, Project Screening Analysis Tables, contains land uses, organized by project size and year of project completion, listing the size of land use (in terms of dwelling units, square feet, or fueling positions) that will exceed the reactive organic compounds (ROC) and oxides of nitrogen (NOx) significance thresholds described in Chapter 3 (see also Section 5.3.1, "Project Screening Analysis Tables"). Projects smaller than the applicable values in Appendix F will not have a significant adverse impact on air quality with respect to ROC and/or NOx emissions. Although a project may fall below the applicable ROC or NOx threshold values in Appendix F, the project should still be assessed for other potential significant air quality impacts, such as fugitive dust, odors, toxic air contaminants, and project consistency with the AQMP.

APCD recommends that lead agencies use the most recent version of URBEMIS adopted by the ARB and the corresponding version of EMFAC. Trip generation factors should be obtained from the most recent version of ITE's *Trip Generation*, or other sources, as appropriate, with justification and documentation to the satisfaction of the lead agency that such changes are warranted.

5.2 CALCULATING OZONE PRECURSOR EMISSIONS FROM PROJECT CONSTRUCTION

Construction operations generate ROC, NO_x, fugitive dust emissions, and possibly air toxics. This section discusses methodologies for calculating ROC and NO_x emissions from project construction. The methodology to estimate fugitive dust emissions is presented in Section 6.2, "Fugitive Dust." The methodology to estimate toxic air contaminant emissions is presented in Section 6.5, "Toxic Air Contaminants."

The primary sources of construction-related ROC and NO_x emissions are gasoline- and diesel-powered, heavy-duty, mobile construction equipment, such as scrapers and motor graders. ROC and NO_x emissions associated with heavy-duty mobile construction equipment should be quantified based on the type of equipment anticipated to be used. Most of such equipment is diesel-powered. URBEMIS can be used to calculate ROC and NO_x emissions from heavy-duty mobile construction equipment. URBEMIS divides construction emissions into three phases: demolition (Phase 1), site grading (Phase 2), and building construction (Phase 3). Building construction is further subdivided into building equipment, architectural coating, asphalt paving, and worker trips. If the URBEMIS program is used to calculate ozone precursor emissions from project construction, the program should be run separately for the construction emissions and for the operational emissions, and the results should not be combined for purposes of comparing to applicable thresholds.

The URBEMIS User's Guide presents emission factors, equipment horsepower, load factors, and hours per day of operation that can be used to manually estimate ROC and NO_x emissions associated with diesel- and gasoline-powered heavy-duty mobile construction equipment. The emission factors in the table are presented in pounds per hour. The emission equation used by URBEMIS for each piece of equipment is as follows:

Equipment Emissions (pounds per day) = # of pieces of equipment * grams per brake horsepower-hour * equipment horsepower * hours/day * load factor

Grams per brake-horsepower hour is based on the construction year and on the average life expectancy of the equipment type. Grams per brake horsepower hour emissions and average equipment life expectancy are from Appendix B of the California Air Resources Board's (ARB's) off-road model (California Air Resources Board 2000). Emission factors used in URBEMIS are found in Appendix H of the URBEMIS User's Guide.

Construction-related emissions (including portable engines and portable engine-driven equipment subject to the ARB's Statewide Portable Equipment Registration Program, and used for construction operations or repair and maintenance activities) of ROC and NO_x are not counted towards the two significance thresholds, since these emissions are temporary. However, construction-related emissions should be mitigated if estimates of

ROC and NO_x emissions from the heavy-duty construction equipment anticipated to be used for a particular project exceed the 5 pounds per day threshold in the Ojai Planning Area, or the 25 pounds per day threshold in the remainder of the county. Mitigation measures to reduce such emissions are listed in Section 7.4.3, “ROC and NO_x Construction Mitigation Measures” and in the mitigation module of URBEMIS.

5.3 CALCULATING OPERATIONAL EMISSIONS

This section presents three methods for assessing whether project emissions will be significant: a screening analysis (Section 5.3.1, “Project Screening Analysis Tables”), a minimal run screening analysis using URBEMIS (Section 5.3.2, “URBEMIS Computer Program -Screening Analysis Mode”), or a detailed run (Section 5.3.3, “URBEMIS Computer Program - Detailed Run”). Lead agencies need not perform the detailed run unless the screening analysis tables or screening analysis URBEMIS run indicates that the project will exceed the 5 pounds per day threshold for ROC and NO_x in the Ojai Planning Area, or the 25 pounds per day threshold for ROC and NO_x in the remainder of the county as described in Chapter 3, Air Quality Significance Thresholds.

For purposes of determining whether or not the project will have a significant adverse impact on air quality, those project-related ROC and NO_x emissions from equipment that is required to have a Ventura County APCD Permit to Operate need not be considered. Such emissions should be subtracted from total project emissions before making a determination as to whether or not the project will have an adverse impact on air quality. Emissions that should be counted toward the ROC and NO_x significance threshold include any emissions that will occur as a result of approval of some type of discretionary use permit.

The project screening analysis mode in the URBEMIS program and the project screening analysis tables in Appendix F of this Guidelines use the default vehicle fleet mix for calculating estimated project emissions. Therefore, for projects where the fleet mix includes a greater percentage of heavy-duty vehicle trips than the default fleet mix, project emissions may be significantly underestimated in the screening analysis mode and the screening analysis tables. An example of this situation might be a warehouse facility where the vehicle trips are predominantly heavy-duty diesel trips. The District recommends that if a lead agency determines that the expected vehicle fleet mix for a project will include more heavy duty vehicles than the default fleet mix, project screening analyses are not appropriate.

5.3.1 Project Screening Analysis Tables

Appendix F identifies project sizes (by project type and year of project completion) that will exceed the ROC or NO_x significance thresholds. The tables in Appendix F were generated using the default values for Ventura County, and the default trip generation rates in URBEMIS. These trip generation rates are from the ITE’s *Trip Generation*, Sixth

Edition, and other sources, as documented in the User's Guide for URBEMIS. The "pass-by trip" option was selected for all land use categories. Emissions from area sources (e.g., natural gas usage, landscaping equipment, and consumer products) have also been included in the tables. The screening analysis in Appendix F does not account for any air quality mitigation measures. For each land use, the applicable unit numbers and/or project size was increased until the resultant ROC emissions or NO_x emissions exceeded the 5 and 25 pounds per day significance thresholds.

Generally, NO_x emissions exceed the significance thresholds before ROC emissions, and therefore usually indicate the project size that will exceed the applicable significance threshold. The years of project completion in Appendix F are those for which there are EMFAC2002 emission factors.

Projects smaller than the applicable threshold values in Appendix F will not have a significant adverse impact on air quality with respect to the one-hour ozone standard. Although a project may fall below the applicable ROC or NO_x threshold values in Appendix F, the project should still be assessed for other potential significant air quality impacts, including, but not limited to, fugitive dust, odors, toxic air contaminants, and project consistency with the AQMP.

If a project is a single land use type (e.g., single family detached housing), Appendix F can be used to determine whether the project is likely to exceed the significance thresholds. If the project is near the size necessary to exceed the significance thresholds, the URBEMIS program should be run, using either the screening analysis mode (see Section 5.3.2, "URBEMIS Computer Program - Screening Analysis Mode"), or a detailed run (see Section 5.3.3, "URBEMIS Computer Program - Detailed Run"). Also, if a project has unique conditions that deviate from the Ventura County default values (see Section 5.3.3.1), the screening analysis is not appropriate, and a detailed run should be performed.

APCD recommends that lead agencies use the most recent version of URBEMIS adopted by the ARB and the corresponding version of EMFAC. Therefore, if a more current version of URBEMIS is available, the District recommends using the more current version of URBEMIS instead of the tables in Appendix F.

5.3.2 URBEMIS Computer Program - Screening Analysis Mode

The URBEMIS screening analysis mode is appropriate if the project contains more than one land use, or if the lead agency has trip generation data from other sources (e.g., traffic studies). Completing a run as described in this section will provide emission estimates that do not account for any air quality mitigation measures, pass-by trips, internal trips, or double-counting adjustments. It relies on the default inputs for Ventura County, and requires only the most basic information about the project. The Summary output lists project area and operational emissions separately, and then adds the emissions together

for an estimate of total project emissions. The Detailed output lists project area and operational emissions. Therefore, project area and operational emissions must be added together to estimate total project emissions. If output from an URBEMIS screening analysis run produces ROC and/or NO_x emissions estimates at, near, or over the applicable significance threshold, a detailed URBEMIS run should be conducted.

Although an URBEMIS screening analysis run may produce ROC and/or NO_x emission estimates less than the applicable significance threshold, the subject project still should be assessed for other potential significant air quality impacts, such as fugitive dust, odors, toxic air contaminants, and project consistency with the AQMP.

5.3.3 URBEMIS Computer Program - Detailed Run

A detailed URBEMIS run is appropriate if any of the following apply: 1) the screening analysis tables indicate that the proposed project will likely exceed ROC or NO_x significance thresholds; 2) the URBEMIS screening analysis mode shows project emissions at, near, or over the applicable ROC or NO_x significance threshold; 3) mitigation measures will be included in the project; or 4) a more detailed analysis of the project is desired. See Section III, "Using URBEMIS2002," Appendix B, "Area Source Emissions," and Appendix C, "Operational (Motor Vehicle) Emissions," of the URBEMIS7G manual for further details. The Summary output lists project area and operational emissions separately, and then adds the emissions together for an estimate of total project emissions. The Detailed output lists project area and operational emissions separately. Therefore, for an estimate of total project emissions from the Detailed output, project area and operational emissions should be added together.

As with the Appendix F screening analysis tables and the URBEMIS screening analysis mode, if a detailed URBEMIS run indicates that project ROC and NO_x emissions will be below the applicable significance threshold, the project still should be assessed for other potential significant air quality impacts, including, but not limited to, fugitive dust, odors, toxic air contaminants, and project consistency with the AQMP.

5.3.3.1 Ventura County-Specific Default Inputs to the URBEMIS Computer Program

The following default values should be used for projects located in Ventura County. These default values may be replaced with more specific project data. However, justification and documentation for the changes should be provided to the satisfaction of the lead agency that such changes are warranted. Documentation and justification of any changes to the URBEMIS default values should be included in the environmental document. If a more current version of the URBEMIS program is available and has updated Ventura County default values, those values should be used instead.

Project Area: Ventura County.

Target Year: Year of project occupancy, or, if not an available choice in the program, the year of project occupancy rounded to the nearest five-year increment.

Ambient Temperature: Use 75° for the summer ambient temperature. Use 50° for the winter ambient temperature.

Trip Characteristics:

Average Speed		Trip Percentages	Trip Lengths	
			Urban	Rural
40	Home-based work	27.4	12.0	15.0
40	Home-based shop	17.7	7.8	10.0
40	Home-based other	54.9	10.0	10.0
40	Commercial-based commute		10.0	15.0
40	Commercial-based non-work		10.0	15.0

Note: Trip percentages for “home-based” trips must add to 100 percent.

5.3.3.2 Area Emissions Estimates

Area sources are sources that individually emit fairly small quantities of air pollutants, but cumulatively may generate significant quantities of emissions. Area source emissions include fuel combustion from natural gas appliances, utility engines (including landscape maintenance equipment), and consumer products. APCD recommends that area source emissions be estimated for all projects that have these types of emission sources. The Summary output lists project area and operational emissions separately, and then adds these emissions together for an estimate of total project emissions. The Detailed output lists project area and operational emissions separately. Therefore, for an estimate of total project emissions from the Detailed output, project area and operational emissions should be added together.

5.3.3.3 Adjustment for Double Counting of Pass-by and Diverted-linked Trips

Traffic generation rates for certain land uses can be overestimated by double counting vehicle trips. This occurs when an establishment attracts some of its trips from traffic passing the site while on the way to another location. Not accounting for the pass-by and diverted-linked trips can substantially overstate indirect source emissions associated with a proposed land use project. By quantifying pass-by and diverted-linked rates for projects, a more accurate representation of indirect source emissions can be obtained.

Trip-making can be categorized as:

Primary Trips: Trips made for the specific purpose of visiting the project. A home-to-shopping-to-home combination of trips is a primary trip set.

Pass-by Trips: Trips made as intermediate stops on the way from an origin to a primary trip destination. Pass-by trips are defined as trips from traffic passing the site on an adjacent street that contains direct access to the project. These trips do not require a diversion from another roadway, and do not add additional mileage. An example is a stop at a convenience store on the way home from work.

Diverted-linked Trips: Trips attracted from the traffic on roadways within the vicinity of the project but requiring a diversion from that roadway to another roadway to gain access to the project site. These roadways could include streets or freeways adjacent to the project, but without direct access to the project.

The URBEMIS computer program offers a method to adjust estimates of project emissions to account for pass-by and diverted-linked trips. While in the URBEMIS program, the Operational Emissions main screen provides an option for selecting pass-by trip adjustments. Clicking this box instructs the program to apply the recommended pass-by and diverted-linked rates. Table 3 of the URBEMIS User's Guide shows estimates of pass-by and diverted linked trip percentages used in the URBEMIS program.

The URBEMIS program can be used to adjust for pass-by and diverted-linked trips only when a default land use category is used. Within any of the default land use categories, the trip generation rate may be modified, and the "pass-by trips" option still works properly. However, if a non-default land use option is used (i.e., the "blank" row in the "Select/Edit Land Use" screens), the "pass-by trips" option does not work properly.

For more information about the use of this program feature, see the URBEMIS User's Guide (Section III.8.1, "Specifying Vehicle Emissions," and Appendix C, "Operational (Motor Vehicle) Emissions, Pass-By Trips").

5.3.3.4 Adjustment for Double Counting of Internal Trips in Multi-use Projects

Trip generation rates in URBEMIS include both motor vehicle trip generation and attraction. Vehicle trips that originate within, and stay within, project boundaries are called internal trips. Therefore, URBEMIS may double count trips if a project contains both residential and non-residential components. However, URBEMIS contains a routine that minimizes double counting of internal trips in mixed-use projects and area plans, master plans, community plans, specific plans, and general plans. The routine only applies if at least one residential and one non-residential land use is specified by the URBEMIS user and the user selects the double-counting correction setting. The routine

is described in the URBEMIS User's Guide (Section III.8.1, "Specifying Vehicle Emissions," and Appendix C, "Operational (Motor Vehicle) Emissions, Double Counting of Multiuse Projects").

5.4 CALCULATING EMISSIONS FROM PROJECT-RELATED STATIONARY SOURCES

Air emissions from any project-related stationary air emission sources that do not require permits from the District should be estimated and included in total project emissions.

Stationary sources are non-mobile equipment, devices, operations, or processes that directly emit air pollutants. Most stationary sources are associated with commercial and industrial facilities and operations. Examples of stationary sources are industrial engines and boilers, turbines, spray paint booths, electronic component manufacturing operations, ready-mixed concrete facilities, plating operations, printing operations, plastic products manufacturing, and coffee roasters.

Air emissions from a wide range of stationary sources are controlled through the District's air pollution permit program. The District permit program mitigates emission increases from stationary sources by requiring emission control devices, emission and process limits, and emission offsets. Appendix B, Common Equipment and Processes Requiring a Ventura County APCD Permit to Operate, provides guidance for determining if equipment and processes will require an APCD Permit to Operate. In addition to Appendix B, lead agencies can refer to District Rule 23, Exemptions from Permit, for a detailed list of equipment and processes that do not require a District permit. Rule 23 is available from the ARB's website at <http://www.arb.ca.gov/drdb/ven/curhtml/r23.htm>. Lead agencies and project applicants also can contact the District's Engineering Division at 805/645-1401 for any questions regarding equipment, operations, and processes that may require a District permit.

Air emissions for equipment, operations, and processes that do not require a District permit may be calculated using emission factors available from the District. Lead agencies and project applicants can contact the District's Permit Section at 805/645-1401 for information regarding appropriate emission factors and emission calculation methodology for a wide range of stationary sources. In addition to District emission factors, emission factors for stationary sources can be obtained from Volume I of the Environmental Protection Agency's *Compilation of Air Pollutant Emission Factors* (AP-42). AP-42, Volume I, contains information on over 200 stationary source categories, and is available at the United States Environmental Protection Agency (U.S. EPA) website at www.epa.gov/ttn/chief/ap42.html.

Emission factor information also may be available from certified environmental documents and from air emissions tests of the subject equipment or very similar equipment. Lead agencies can contact the District at 805/645-1401 to inquire about any

appropriate emission test data that the District may have for a particular stationary source or source type.